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COMMITTEE ON THE PEACEFUL USES
OF OUTER SPACE

DRAFT REPORT OF THE SCIENTIFIC AND TECHNICAL SUBCOMMITTEE ON THE WORK OF ITS THIRTIETH SESSION

Addendum

III. MATTERS RELATING TO REMOTE SENSING OF THE EARTH BY SATELLITES INCLUDING, INTER ALIA, APPLICATIONS FOR DEVELOPING COUNTRIES

1. In accordance with General Assembly resolution 47/67, the Subcommittee continued its consideration of this item.

2. In the course of the debate, delegations reviewed the national and cooperative programmes in remote sensing. Examples were given of national programmes in developing and developed countries and of international programmes based on bilateral, regional and international cooperation, including programmes of technical cooperation between developing countries. Countries with advanced capabilities in the field, including some developing countries, described programmes to provide assistance to other developing countries.

3. The Subcommittee took note of the continuing programmes of China, France, India, Japan, the Russian Federation, the United States and ESA for remote-sensing satellites as well as the planned remote-sensing satellite systems of Brazil and Canada. The Subcommittee noted that the recent launches of the European Remote Sensing (ERS-1) satellite and the Japanese Earth Resources Satellite (JERS-1) would provide valuable microwave data to complement the multispectral data from satellites of the Landsat, Resurs, SPOT, Indian Remote Sensing (IRS) and Marine Observation Satellite (MOS) series. It also took note of the activities of FAO in remote sensing of renewable natural resources, including land-cover mapping and geographic information systems, of the initiative of UNESCO for the establishment of satellite data centres, of the work of WMO in the areas of weather forecasting

and storm warning and of ISPRS in promoting international cooperation in remote sensing and image processing.

4. The Subcommittee reiterated its view that remote-sensing activities should take into account the need to provide appropriate and non-discriminatory assistance to meet the needs of the developing countries.

5. The Subcommittee emphasized the importance of making remote-sensing data and analysed information openly available to all countries at reasonable cost and in a timely manner. The Subcommittee also recognized the need for continuing free access to data from operational meteorological satellites.

6. The Subcommittee felt that international cooperation in the use of remote-sensing satellites should be encouraged, both through coordination of the operations of ground stations and through regular meetings between satellite operators and users. It noted the importance of compatibility and complementarity of existing and future remote-sensing systems. The Subcommittee also noted the importance, particularly for the developing countries, of sharing experiences and technologies, of cooperation through international and regional remote-sensing centres and of joint work on collaborative projects.

7. Recalling General Assembly resolution 41/65 of 3 December 1986, by which the Assembly had adopted the Principles Relating to Remote Sensing of the Earth from Outer Space, the Subcommittee recommended that at its thirty-first session it continue its discussion on remote-sensing activities conducted in accordance with those Principles, during its consideration of the agenda item concerning remote sensing.

8. The Subcommittee recommended that the item be retained on its agenda as a priority item for the next session.

IV. USE OF NUCLEAR POWER SOURCES IN OUTER SPACE

9. In accordance with General Assembly resolution 47/67, the Subcommittee continued its consideration of this item.

10. The Subcommittee noted with satisfaction that, on the basis of many years of work in the Committee and its subcommittees, the General Assembly had adopted a Set of Principles Relevant to the Use of Nuclear Power Sources in Outer Space, as contained in resolution 47/68 of 14 December 1992. The Subcommittee also noted that the Principles provided that they should be reopened for revision by the Committee on the Peaceful Uses of Outer Space no later than two years after their adoption.

11. In accordance with General Assembly resolution 47/67, the Working Group on the Use of Nuclear Power Sources in Outer Space was reconvened to resume its work at the current session. The Working Group met from 22 to .... February under the chairmanship of Professor J. H. Carver (Australia). At a meeting held on .... February 1993, the Working Group adopted its report.

12. At its .....th meeting, on .... February 1993, the Subcommittee adopted the report of the Working Group, which is contained in annex III to the present report.

13. The Subcommittee noted that in response to its recommendation, the General Assembly, in resolution 47/67, had invited Member States to report to the Secretary-General on a regular basis with regard to national and international research concerning the safety of nuclear-powered satellites. The Subcommittee also noted that the General Assembly, in the same resolution, had considered that, to the extent possible, information on the problem of collisions of space objects, including nuclear power sources, with space debris should be provided to the Scientific and Technical Subcommittee in order to allow it to follow this area more closely. The Subcommittee noted that a number of Member States had submitted information in response to those requests, as contained in document A/AC.105/542 and Add.1 and 2.

14. The Subcommittee agreed that Member States should continue to be invited to report to the Secretary-General on a regular basis with regard to national and international research concerning the safety of nuclear-powered satellites. The Subcommittee also agreed that further studies should be conducted on the problem of the collision of nuclear power sources with space debris and that it should be kept informed of the results of such studies.

15. The Subcommittee took note of working papers submitted by the United Kingdom (A/AC.105/C.1/L.187) and the Russian Federation (A/AC.105/C.1/L.188) on safety aspects of nuclear power sources in space, and a paper circulated by Pakistan (S&T/1993/CRP.2) on risks and radiological consequences of debris collisions with nuclear power sources in space.

16. The Subcommittee recommended that the item be retained on its agenda for the next session. The Subcommittee also recommended that the Working Group on the Use of Nuclear Power Sources in Outer Space be reconvened at its next session.

V. QUESTIONS RELATING TO SPACE TRANSPORTATION SYSTEMS AND THEIR IMPLICATIONS FOR FUTURE ACTIVITIES IN SPACE

17. In accordance with General Assembly resolution 47/67, the Subcommittee continued its consideration of this item.

18. In the course of the discussion, delegations reviewed national and international cooperative programmes in space transportation systems, including expendable launchers, reusable space shuttles and space stations. In particular, the Committee noted that China was continuing the use and development of its Long March series of launch vehicles; that India was continuing development of the Augmented Satellite Launch Vehicle, the Polar Satellite Launch Vehicle and the Geostationary Satellite Launch Vehicle; that Japan was continuing its development of the H-II and M-5 launch vehicles; that the Russian Federation had launched 78 space objects of various types using

expendable launchers of the Soyuz, Cosmos, Proton, Tsyklon and other series, and had sent a number of national and international crews to the Mir space station; that the United States was continuing its programme of expendable launches and flights of the reusable Space Shuttle and was developing the Space Station Freedom in cooperation with Canada, Japan and ESA; and that ESA was continuing development of the Ariane series of launch vehicles. The Subcommittee heard a special presentation by a United States astronaut on a Space Shuttle/Spacelab mission that conducted microgravity experiments, as mentioned in paragraph .... of the present report.

19. The Subcommittee took note of developments in low-cost microsatellite technology and applications that could allow more countries to take an active part in space activities.

20. The Subcommittee stressed the importance of international cooperation in space transportation in order to provide all countries with access to the benefits of space science and technology.

21. The Subcommittee recommended that consideration of the item be continued at its next session.

VI. EXAMINATION OF THE PHYSICAL NATURE AND TECHNICAL ATTRIBUTES OF THE GEOSTATIONARY ORBIT; EXAMINATION OF ITS UTILIZATION AND APPLICATIONS, INCLUDING, INTER ALIA, IN THE FIELD OF SPACE COMMUNICATIONS, AS WELL AS OTHER QUESTIONS RELATING TO SPACE COMMUNICATIONS DEVELOPMENTS, TAKING PARTICULAR ACCOUNT OF THE NEEDS AND INTERESTS OF DEVELOPING COUNTRIES

VII. THE THEME FIXED FOR SPECIAL ATTENTION AT THE 1993 SESSION: "SPACE-BASED COMMUNICATION: THE EXPANSION OF CURRENT SERVICES AND INCREASED UNDERSTANDING OF NEW SYSTEMS AND THE SERVICES THEY WILL MAKE POSSIBLE"

22. In accordance with General Assembly resolution 47/67, the Subcommittee continued its consideration of the item relating to the geostationary orbit and space communications and considered the special theme.

23. In accordance with General Assembly resolution 47/67, the Subcommittee paid special attention to the theme "Space-based communication: the expansion of current services and increased understanding of new systems and the services they will make possible". The Subcommittee noted with satisfaction that, at its invitation, COSPAR and IAF had organized a symposium on the theme on 16 and 17 February 1993 (see para. .... above). The Subcommittee expressed appreciation to COSPAR and IAF for the very instructive symposium.

24. In the course of the discussion, delegations reviewed national and international cooperative programmes in satellite communications, including progress in communication satellite technology that would make satellite communications more accessible and less expensive and increase the

communications capacity of the geostationary orbit and the electromagnetic spectrum.

25. The Subcommittee took note of the growing use of communication satellite systems for telecommunications, television broadcasting, data networks, environmental data relay, mobile communications, disaster warning and relief, telemedicine and other communication functions. The Subcommittee also took note of studies and research on the use of multiple, low-orbiting satellites for mobile and other communication services.

26. Some delegations expressed the view that the geostationary orbit was a limited natural resource and that saturation should be avoided in order to ensure that all countries had non-discriminatory access to the orbit. Those delegations felt that a special regime was required to ensure equitable access by all States, particularly developing countries. They felt that the roles of ITU and the Committee on the Peaceful Uses of Outer Space with respect to the geostationary orbit were complementary. Other delegations expressed the view that questions relating to the geostationary orbit were being addressed effectively in ITU.

27. Some delegations noted that the use of the geostationary orbit, like other orbits, was affected by the problem of space debris and that efforts were needed to minimize the generation of debris in the orbit and to move satellites shortly before the end of their useful lives into disposal orbits beyond the geostationary orbit.

28. The Subcommittee noted the use of the Cospas/Sarsat search-and-rescue satellite system developed and operated on the basis of international cooperation. The Subcommittee recommended that countries not already participating in that programme consider doing so.

29. The Subcommittee recommended that consideration of the item relating to the geostationary orbit and space communications be continued at its next session.

VIII. PROGRESS IN NATIONAL AND INTERNATIONAL SPACE ACTIVITIES RELATED TO THE EARTH ENVIRONMENT, IN PARTICULAR PROGRESS IN THE GEOSPHERE-BIOSPHERE (GLOBAL CHANGE) PROGRAMME

30. In accordance with General Assembly resolution 47/67, the Subcommittee continued its consideration of the item concerning progress in national and international space activities related to the Earth environment, in particular progress in the International Geosphere-Biosphere (Global Change) Programme.

31. The Subcommittee noted that the Secretariat, at the request of the Committee and the General Assembly, was preparing an analytical study on the role that the Committee could play in view of the decisions and recommendations of the United Nations Conference on Environment and Development, held at Rio de Janeiro in June 1992. The Subcommittee noted that

the General Assembly had invited Member States to submit their views on the subject in time for inclusion in that study and urged Member States to respond to that request.

32. The Subcommittee noted the progress being made through international cooperation in the International Geosphere-Biosphere Programme, with the participation of many countries. It noted that such a joint international effort was of fundamental importance for examining the future habitability of the planet and for managing the common natural resources of the Earth. The Subcommittee took particular note of the need to involve as many nations as possible in the scientific activities of the Programme, both in developed and in developing countries.

33. The Subcommittee took note of the important contributions of satellite remote sensing for environmental monitoring, for planning sustainable development, for water resource development, for monitoring crop conditions and for predicting and assessing drought.

34. The Subcommittee noted the important contribution of meteorological and atmospheric research satellites for studying global climate change, the greenhouse effect, the degradation of the ozone layer and other global environmental processes. The recent launches of the Topex/Poseidon oceanographic satellite, the Upper Atmosphere Research Satellite and the Total Ozone Mapping System have provided important new tools for this purpose. The Subcommittee noted the need for further space research relating to climate change, weather patterns, vegetation distribution, storm and flood risk and other environmental factors.

35. The Subcommittee noted the importance of international cooperation in the various existing and planned satellite systems for environmental monitoring. It recommended that other States consider participating in such cooperative activities.

36. The Subcommittee recommended that consideration of the item be continued at its next session.